

**Attn: Science Dept. Heads, Science & Physics Teachers
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*University of
British Columbia*

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National Version

PHYSICS & ASTRONOMY

Outreach Program News

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Welcome to the 3rd issue of **UBC Physics & Astronomy Outreach Program News!** We've made a few changes that we hope will improve your reading experience. First of all, we now produce two types of our newsletter - a BC and a national version - so our readers can receive more relevant information. Also, we have gone digital - print copies will no longer be produced in an effort to be environmentally friendly!!

Speaking of the environment, check out our **Quick Study** for a 'historical' look at global warming. If you are a teacher, perhaps your students would be interested in competing in the **Michael Smith Challenge, Physics Olympiad**, or in considering various academic programs at UBC (including the new **dual degree program in Physics & Education!**).

You can subscribe to either the BC or the national version of our newsletter at our website: <http://www.phas.ubc.ca/outreach/web/emailList.php>. Thank you for your interest in Science Outreach and we hope you enjoy the issue!

Contact Us

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Register Now!!

The Michael Smith Challenge (National) – March 12th

A Challenge on Logical Thinking for Astronomy, Biology, Chemistry, Earth Science, and Physics

The Michael Smith Science Challenge is a **national** competition written by students currently taking **Grade 10 Science or lower**. **This event is run at the students' school (hence no travelling!)** It emphasizes logical thinking, and covers material in the science curriculum common to all provinces. It is named in honour of UBC's Nobel Prize Winner Dr. Michael Smith, and is sponsored by the UBC faculty of Science and NSERC PromoScience.

PRIZES:

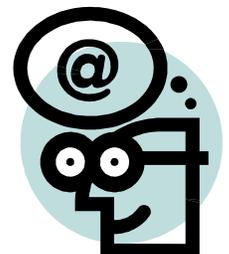
Nationally: 1st - \$500, 2nd - \$250, 3rd - \$100
Provincially: \$100 for top student without a national prize, \$50 for each student in a tie
Teachers: \$50 for a teacher with a prize-winning student

WHEN: 9-10am Pacific Standard Time, Thursday, March 12, 2009

COST: \$5.00 /script (cost of marking one exam)

For more information or to register, visit: <http://www.physics.ubc.ca/outreach/web/smith/>

Contact mschall@phas.ubc.ca if you have any question regarding this event!



Upcoming Events

Physics Olympiad (Western Canada) – March & April

WHO: Canadian high school students from BC, AB, SK, MB, YT, or NT who are under the age of 20 and have never taken university courses.

WHAT: Write a selection examination to qualify for the Western Canada Physics Olympiad Weekend camp in Vancouver.

WHERE: Details can be found online at <http://www.physics.ubc.ca/outreach/web/olympiadcamp.php>

WHEN: The selection exam will be posted online in March; no pre-registration is required. The Olympiad Weekend camp will take place from **April 24-26**.

WHY:

- Because solving interesting problems can be fun
- Canada will send a team of five students, who are best of the National Competition, to the **International Physics Olympiad Competition in Mexico in July 2009!!**



If you have any question, or need more information, write to us at: outreach@phas.ubc.ca

Outreach & Education Programs 2009



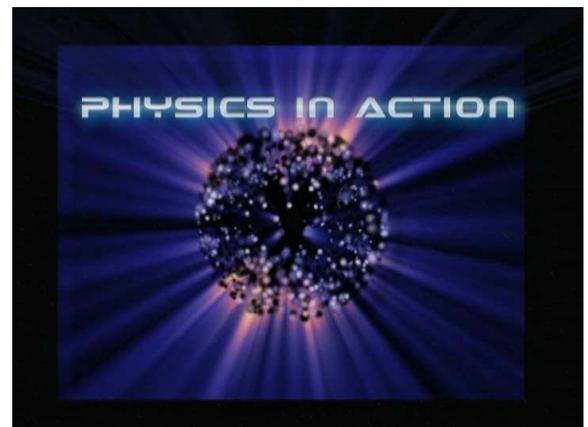
TRIUMF

Canada's National Laboratory for Particle & Nuclear Physics
4004 Wesbrook Mall, Vancouver, BC V6T 2A3

Physics in Action

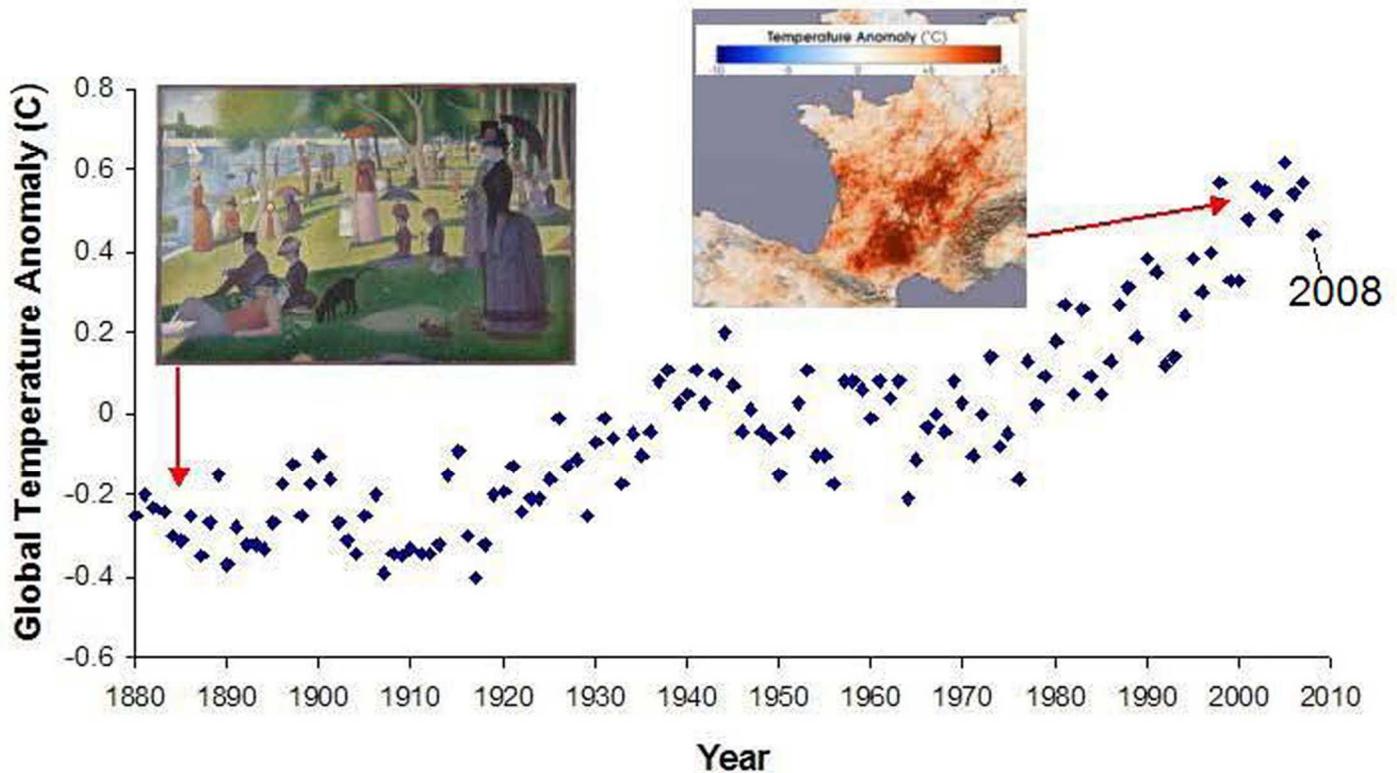
TRIUMF is releasing a new educational DVD this season which will use the cutting-edge science and the world's largest cyclotron to teach basic concepts in physics. Pre-order your copy today!!

<http://www.triumf.info/public/students/videos/>



Quick Study: 2008 - that was the year that was

It may come as a surprise to learn that 2008 was either the 9th or 10th hottest year globally since instrumental records began in the mid-nineteenth century. The global mean temperature was 14.3°C, compared to 14.0°C for the 1961-1990 average. The ranking of years by temperature, and the uncertainties involved, are nicely laid out on the UK Met Office's website, and this site comments "Globally this year would have been considered warm, even as recently as the 1970s or 1980s, but a scorcher for our Victorian ancestors." It is interesting to ask what effect a changing climate has had on habits of dress. Consider for example Georges Seurat's painting "Un dimanche après-midi à l'Île de la Grande Jatte"; the Parisians sunning themselves seem to be wearing rather more clothing than they do today. Check the plot below and see what the climate was doing in 1884-6 while Seurat was painting it, and compare with 2003 when there were 14,000 deaths from heat stroke in France.



The NASA website gives the raw data (plotted above) and the reasons why North Americans didn't feel much of this heat. La Niña, the cool phase of the El Niño-Southern Oscillation (ENSO), kept us cool, while much of northern Europe and the Arctic were 2°C above the 1961-1990 average. Siberia was 3°C above this average, and the resulting methane emissions from the wetlands there seem to have caused the atmospheric fraction of that potent greenhouse gas to start rising again after a decade of stability.

It is clear from the graph that last year was warmer than any year prior to 1998, and that the 2008 data point takes its place in the general scattered upward rise.

– Chris Waltham 2009/01/19

Chris Waltham is a professor in the Department of Physics and Astronomy at UBC. His teaching interests include the physics of energy and climate issues

¹<http://www.metoffice.gov.uk/corporate/pressoffice/2008/pr20081216.html>

²http://en.wikipedia.org/wiki/File:Georges_Seurat_-_Un_dimanche_apr%C3%A8s-midi_%C3%A0_l'Île_de_la_Grande_Jatte_v2.jpeg

³http://en.wikipedia.org/wiki/2003_European_heat_wave

⁴<http://data.giss.nasa.gov/gistemp/2008/>

⁵<http://www.agu.org/pubs/crossref/2008/2008GL036037.shtml>

Academic Programs

Engineering Physics at UBC

...Turn Ideas into Reality...



Engineering Physics at UBC is a **challenging interdisciplinary degree** designed to train those who wish to work at the **leading edge of scientific and technological innovation**. By applying the fundamentals of physics with the practicality of engineering, our students are given the skills to become tomorrow's inventors, technology leaders, discoverers of new science, and developers of new medical techniques.

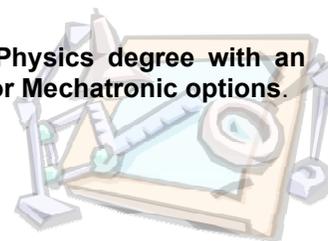
The Engineering Physics program combines an **Honours Physics degree with an Engineering degree in Electrical, Mechanical, Computer, or Mechatronic options**.

For more information, please visit: www.engphys.ubc.ca

Or, contact the UBC Engineering Physics Program

Tel: 604-822-6451; Fax: 604-822-5324

Email: andre@physics.ubc.ca (Director Andre Marziali)



Passionate about Science but concerned about big first-year classes and impersonal teaching?

Consider: UBC Science One Program

An Integrated First-Year Science Program at the University of British Columbia



Program Features:

- Integrated Science
- 1st Year (both terms)
- 75 students
- 8 faculty members
- 25 credits + 2 for co-req Bio 140
- Small-group learning
- Proven results

Observe... the natural world and universe around you

Describe... use mathematics to speak precisely about the world around you

Understand... experience the joy of insight

Synthesize... use fundamental principles to form a wholistic view of the subatomic realm, chemical reactions, genetics, ecology, climatology and cosmology

Apply... what you have learned to entirely new situations

Learn... how to learn

Think... like a scientist

Become... a scientist

For more information and on-line application visit our website:

www.scienceone.ubc.ca

You will be asked to write a short essay describing your passion for science.

A separate application for admission to UBC Faculty of Science is required.

Academic Requirements:

Mathematics 12, Calculus 12, Physics 12, Chemistry 12, Biology 11 or 12 (or BC equivalents)

Questions? Contact us at

Email: science1@interchange.ubc.ca
or Telephone: (604) 822-5552

Dual Degree Program: Mathematics or Physics and Education



Year

1st	Standard Science
2nd	Physics/Math + Education Seminar & Practicum
3rd	Full Entry

Special Program Features:

- 5 year program
- 2 Degrees (B.Ed & B.Sc)

Speed... shorter and few credits

Flexibility... can return to B.Sc in 4th year

Depth... learn about teaching mathematics and physics while being a student yourself

Variety... combine mathematics and physics courses with children

Proven... concurrent education is a good way to become a good teacher

More Information:

www.math.ubc.ca/Ugrad/education
www.phas.ubc.ca/education

Applications to the dual degree program will be considered in the spring of your 2nd year.

An average of 65% is required to apply.

You must be ready to volunteer with children ages 13-18.

Interested?

Contact Professor Chris Waltham at:
cew@phas.ubc.ca

There is a shortage of Physics and Mathematics teachers throughout the entire NATION!